

## CLAIMS

1     1.     In the context of a printing system comprising one or more host apparatuses sending  
2     print job data containing a plurality of objects; and one or more printers carrying out printing  
3     of the plurality of objects based on the print job data from host apparatus or apparatuses, a  
4     printing system comprising:

5             one or more first storage means for storing the print job data;

6             one or more job status monitoring means for creating job status information for each  
7     one of the objects by monitoring operations carried out by the printer or printers in connection  
8     with printing of the plurality of objects;

9             one or more second storage means for storing the created job status information;

10            one or more determining means for, in the event of occurrence of one or more printing  
11     errors during printing of the plurality of objects at the printer or printers, determining whether  
12     after occurrence of the printing error or errors the printer or printers has or have recovered  
13     from one or more printing error states to one or more states permitting printing; and

14            one or more print resuming means for, in the event that it is determined that the printer  
15     or printers has or have recovered to the state or states permitting printing, selecting one or  
16     more objects from among the plurality of objects based on the print job data stored at the first  
17     storage means and the job status information stored at the second storage means, and causing  
18     resumption of printing of the selected object or objects.

1     2.     A printing method comprising:

2             one or more steps in which print job data containing a plurality of objects is sent from  
3     one or more host apparatuses to one or more printers;

4             one or more steps in which printing of the plurality of objects is carried out at one or  
5     more printers based on the print job data from host apparatus or apparatuses;

6             one or more steps in which the print job data is stored;

7             one or more steps in which operations carried out by the printer or printers in

8 connection with printing of the plurality of objects are monitored and job status information is  
9 created for each one of the objects;

10 one or more steps in which the created job status information is stored;

11 one or more steps in which, in the event of occurrence of one or more printing errors  
12 during printing of the plurality of objects at the printer or printers, determination is made as to  
13 whether after occurrence of the printing error or errors the printer or printers has or have  
14 recovered from one or more printing error states to one or more states permitting printing; and

15 one or more steps in which, in the event that it is determined that the printer or  
16 printers has or have recovered to the state or states permitting printing, one or more objects is  
17 or are selected from among the plurality of objects based on the stored print job data and the  
18 stored job status information, and printing of the selected object or objects is resumed.

1 3. A printing method according to claim 2 wherein, at the step or steps in which printing  
2 is resumed, in the event that it is determined that the printer or printers has or have recovered  
3 to the state or states permitting printing, printing of the selected object or objects is  
4 automatically resumed.

1 4. A printing method according to claim 2 wherein:

2 the job status information includes object identification information for specifying one  
3 or more objects subject to printing and information indicating one or more numbers of the  
4 object or objects subject to printing which has or have already been printed; and

5 at the step or steps in which printing is resumed, one or more objects for which  
6 printing has not yet been completed is or are selected based on the job status information and  
7 the print job data, and printing of the object or objects for which printing has not yet been  
8 completed is resumed.

1 5. A printing method according to claim 2 wherein the step or steps in which the print  
2 job data is stored and the step or steps in which the job status information is stored are carried  
3 out by the host apparatus or apparatuses.

1 6. A printing method according to claim 5 wherein the print job data and the job status  
2 information are stored on one or more rewritable recording media removably installed at the  
3 host apparatus or apparatuses.

1 7. A printing method according to claim 5 wherein:  
2 the print job data includes one or more image files, and one or more print specification  
3 files specifying one or more manners of printing the image file or files; and  
4 at the step or steps in which the job status information is stored, the job status  
5 information is recorded in the print specification file or files.

1 8. A printing method according to claim 5 further comprising:  
2 one or more steps in which the stored job status information is retained by the host  
3 apparatus or apparatuses at least until printing of the print job data is completed; and  
4 one or more steps in which, in the event that it is determined that the printer or  
5 printers has or have recovered to the state or states permitting printing, the print job status  
6 information and the print job data stored by the host apparatus or apparatuses are sent from  
7 the host apparatus or apparatuses to the printer or printers;  
8 wherein, at the step or steps in which printing is resumed, the printer or printers select  
9 one or more objects for which printing has not yet been completed from among the plurality  
10 of objects based on the job status information and the print job data from the host apparatus or  
11 apparatuses, and resume printing of the object or objects for which printing has not yet been  
12 completed.

1 9. A printing method according to claim 5 wherein:  
2 in the event that the printing error or errors occur due to one or more reasons  
3 attributable to the host apparatus or apparatuses, the step or steps in which job status  
4 information is stored is or are carried out by the printer or printers; and  
5 the printing method further comprises one or more steps in which, in the event that the  
6 reason or reasons attributable to the host apparatus or apparatuses has or have been corrected  
7 and it is determined that the printer or printers has or have returned to one or more states

8 permitting printing, the job status information stored by the printer or printers is sent from the  
9 printer or printers to the host apparatus or apparatuses.

1 10. A printing method according to claim 4 wherein:

2 the print job data includes one or more image files, and one or more print specification  
3 files specifying one or more manners of printing the image file or files;

4 the print specification file or files contains or contain information specifying how  
5 many sets of prints are to be printed, and path information indicating where the image file or  
6 files are stored; and

7 the object identification information included in the job status information is made up  
8 of one or more portions of the path information for the image file or files which is or are  
9 associated with the object or objects subject to printing.

1 11. A host apparatus sending print job data containing a plurality of objects to one or  
2 more printers and causing printing to be carried out, the host apparatus comprising:

3 one or more first storage means for storing the print job data;

4 one or more second storage means for storing job status information for each one of  
5 the objects, the job status information being created based on operations carried out by the  
6 printer or printers in connection with printing of the plurality of objects;

7 one or more determining means for, in the event of occurrence of one or more printing  
8 errors during printing of the plurality of objects at the printer or printers, determining whether  
9 after occurrence of the printing error or errors the printer or printers has or have recovered  
10 from one or more printing error states to one or more states permitting printing; and

11 one or more resumption instruction means for, in the event that it is determined that  
12 the printer or printers has or have recovered to the state or states permitting printing,  
13 controlling the printer or printers so as to cause resumption of printing of one or more objects  
14 selected from among the plurality of objects based on the print job data and the job status  
15 information, this having been permitted as a result of sending of the print job data stored at

the first storage means and the job status information stored at the second storage means to the printer or printers.

12. A printer receiving print job data containing a plurality of objects from one or more host apparatuses and carrying out printing thereof, the printer comprising:

one or more job status monitoring means for creating job status information for each one of the objects by monitoring operations carried out by the printer or printers in connection with printing of the plurality of objects, and for sending the created job status information to the host apparatus or apparatuses;

one or more determining means for, in the event of occurrence of one or more printing errors during printing of the plurality of objects, determining whether after occurrence of the printing error or errors the printer or printers has or have recovered from one or more printing error states to one or more states permitting printing; and

one or more print resuming means for, in the event that it is determined that the printer or printers has or have recovered to the state or states permitting printing, receiving the print job data and the job status information from the host apparatus or apparatuses, selecting one or more objects from among the plurality of objects based on the print job data and the job status information, and resuming printing of the selected object or objects.

13. A computer program for causing one or more computers to execute a method in which print job data containing a plurality of objects is sent to one or more printers and printing is caused to be carried out, the method comprising:

one or more steps in which the print job data is stored;

one or more steps in which job status information for each one of the objects is stored, the job status information being created based on operations carried out by the printer or printers in connection with printing of the plurality of objects;

one or more steps in which, in the event of occurrence of one or more printing errors during printing of the plurality of objects at the printer or printers, determination is made as to whether after occurrence of the printing error or errors the printer or printers has or have

11 recovered from one or more printing error states to one or more states permitting printing; and  
12 one or more steps in which, in the event that it is determined that the printer or  
13 printers has or have recovered to the state or states permitting printing, the printer or printers  
14 is or are controlled so as to cause resumption of printing of one or more objects selected from  
15 among the plurality of objects based on the print job data and the job status information, this  
16 having been permitted as a result of sending of the stored print job data and the stored job  
17 status information to the printer or printers.